

Description of Additional Supplementary Files

File name: Supplementary Data 1

Description: ExWAS summary statistics.

File name: Supplementary Data 2

Description: Summary statistics for gene-based collapsing analyses.

File name: Supplementary Data 3

Description: Summary statistics for combined gene-based collapsing analyses.

File name: Supplementary Data 4

Description: *MUC5B* allele frequencies in carriers of the *SPDL1* variant, carriers of QVs in telomerase pathway genes, all other IPF cases, and Non-Finnish Europeans in gnomAD.

File name: Supplementary Data 5

Description: TelSeq-inferred telomerase lengths for PROFILE participants.

File name: Supplementary Data 6

Description: Differential gene expression data.

File name: Supplementary Data 7

Description: Putatively Pathogenic *RTEL1*, *PARN*, *TERC* and *TERT* variants.